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ABSTRACT

This self-instructional unit for supervisors and managers in the British hotel and catering industry is intended to consolidate work covered in a 1-day course. The document begins with an introduction and advice on how to use the unit. The following topics are covered in the unit: (1) planning the menu; (2) food production systems; (3) kitchen planning and equipment; (4) production control; and (5) pricing. Each section contains trainee objectives and pencil and paper activities, with suggested answers, designed to help trainees meet those objectives. (CML)

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OPERATIONAL MANAGEMENT PROGRAMME

Food & Beverage Management
MODULE

FOOD & BEVERAGE PRODUCTION

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Food & Beverage Production was first published in 1985 as part of *Food and Beverage Management* — produced under an Open Tech contract with the then Manpower Services Commission, and written by Peter Jones. It was extensively revised in 1988. The text used in *Food & Beverage Production* has been further revised and edited by Roy Hayter. Cartoons are by Ian West.

Thanks are due to Blandford Press for permission to reproduce the kitchen plans (pages 23, 24 and 25), first published in *Kitchen Planning and Design — Case Studies*, by Peter Douglas.

Peter Critten
Management Development Manager

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FOOD & BEVERAGE PRODUCTION

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HOW TO USE THIS UNIT

The material in *Food & Beverage Production* is presented in a self-instructional format. It will help build on and consolidate the work covered in the one-day HCT course of the same title.

Food & Beverage Production is divided into five sections. At the start of each is a statement of the objectives you will be able to achieve as a result of working through the material that follows.

From time to time you will be asked to relate information given in the text to your own experience and knowledge. Space is provided below these activities for you to write your answers. Some suggested solutions to the questions are given on the following page.

You will also be referred to four other books:

- *Food Service Operations* by Peter Jones, published by Cassell Educational Limited, London, 1988, ISBN 0 304 31566 4
- *Foodcraft 1: The Dry Processes*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 45786 2
- *Foodcraft 2: The Wet Processes*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 45787 0
- *Servicecraft: Food and Beverage Service*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 46335 8.

Delegates on the HCT's course will receive a number of assignments relating to *Food & Beverage Production*.

INTRODUCTION

In *Food & Beverage Production* you will cover all aspects of the subject from planning the menu and selecting the appropriate systems and equipment, to setting the right selling price, margins and profit levels.

First you are introduced to a method for systematically planning the menu and correctly setting it out.

Then you review the various food production systems, kitchen layouts and equipment.

Finally you look at food production control, pricing and related aspects of financial control.

SECTION 1
Planning the menu

"I'm sorry – the fish is off"

After completing this section you will be able to:

- explain the role of the menu in a catering operation
- understand the different types of menu
- plan well balanced menus
- write menus correctly.

A great deal of time is spent selecting, preparing, presenting and serving appropriate dishes to the customers of catering establishments, and the menu is the means of informing the customer what dishes are available.

Read section 11.5 of Food Service Operations *(pages 173 and 174), then study the menus on pages 30, 31, 33, 36, 42, 83, 89 and 133. List below the ways in which these menus differ from each other.*

The ways in which the menus vary include:

- language in which they are written
- whether or not there is a description of the dishes
- how if at all the menu/individual dishes are priced
- number of courses
- amount of choice
- whether or not the menu is dated.

Menus can be grouped into three categories:

- *table d'hôte*: offer a fixed number of dishes for an overall price. There may be a choice of dishes for each course and sometimes certain dishes are offered at an additional charge, for example fillet steak.
- *à la carte*: offer a choice of individually priced dishes, generally grouped into courses.
- *special menus* for a function or special occasion, when the customers are not paying directly for the food, for example because the ticket price includes a buffet supper, or the event has been paid for by the hosts.

(Examples of these menus can be seen in *Food Service Operations* on pages 83, 175 and 42 respectively.)

Menus vary considerably in the way they present the information. What is important is that the menu effectively communicates to the customer what is available/being served. For this reason more and more menus are written in English, and if traditional French terms are used an explanation follows in English of what the dish comprises.

Most menus offer a sequence of dishes:

- a first course, appetiser or hors d'oeuvres to stimulate the appetite
- a main course with vegetables and/or salad to accompany it
- a sweet or cheese to complete the meal.

In pubs for example the menu may include a small but interesting range of dishes, some designed to appeal to those who want a light snack, others more substantial. Soup with a roll may be all that some customers require, while others may opt for cheese and fruit, and yet others will have both with curry and rice in between.

The traditional sequence of courses is too elaborate for most customers nowadays, but it remains a useful guide to menu construction:

1. *Hors d'oeuvres*, appetiser or starter
2. Soup or *potage*
3. Egg dishes or *oeufs*
4. Pasta or farinaceous dishes
5. Fish or *poisson*
6. *Entrées* (first of the meat courses)
7. Sorbet or water ice (to refresh the palate)
8. Grills or *grillades* (another meat course)
9. Roasts or *rôties* (third meat course)
10. Vegetables or *légumes*
11. Salads or *salades*
12. Sweets, desserts or *entremets*
13. Savouries
14. Cheeses or *fromages*
15. Fresh fruit (and sometimes dried fruit and nuts) or *dessert*
16. Coffee or *café*

A three course table d'hôte menu would probably include a selection of dishes from 1 to 5 in the first course, from 5 to 11 in the main course, and 12 to 15 in the third course. Menus for elaborate banquets may include five or more of the courses but offer no choice.

A variety of factors influence how the menu is planned. Their relative importance will depend on the circumstances.

Customer's expectations These will be reflected in the amount of money the customers are prepared to pay for the meal, their social background, their age and the part of the country or world they come from. An airline menu for example might reflect the fact that its customers have paid a first class fare and are flying to Singapore.

Balance of the meal The menu should offer the customer a combination of dishes that provide contrast in colour, a variety of ingredients, different cooking methods, a variety of textures, different seasonings and sauces, and which avoid using the same words in the menu description. It is also important that this contrasting combination is planned in the right order with a balance of light and heavy dishes, and no dish dominating the flavour of subsequent dishes.

Number and expertise of the staff Dishes should not be offered on the menu unless they can be properly prepared and served.

Equipment The preparation and service equipment must be of the right type and size to enable the staff to prepare and serve the dishes to the right standard and in the time available.

Season of the year Substantial dishes are usually more appropriate in cold weather, salads in summer. Certain foods are of better quality or more readily available at certain times of the year.

Availability of ingredients The items required to prepare the dishes on the menu must be in stock or on order for delivery when needed.

Nutritional balance In situations where the customers' principal source of nutrition is a limited choice menu offered by a school, hospital, residential home or similar establishment, their need for a balanced, healthy diet will be important. Many restaurants whose customers have a wider choice of eating establishment and of dishes, usually include on the menu vegetarian dishes or modified traditional dishes that are high in fibre, low in fat, low in sugar and/or cooked without salt.

> For more information on menu planning, nutrition and healthy eating see the *Foodcraft* and *Servicecraft* books (titles on page 2) and the Mastercraft video *Foodcraft 8: Catering for Health*.

The best way to plan a menu is to follow a careful routine.

1. Select the main course dish(es). This probably includes the principal and most expensive ingredient of the meal.
2. Select the course preceding the main course.
3. Select the first course (if there are two courses before the main course).
4. Select the vegetables to accompany the main course. This helps to avoid a conflict with the earlier courses.
5. Select the final course. Leaving this to the end gives plenty of opportunity to introduce further colours, different textures and increase the variety of flavourings and tastes.

Planning the menu for the annual regimental dinner of retired guards officers will show how this routine can work in practice. There will be 80 or so guests, the dinner is being held in June and the food cost has to be kept to a reasonable level for four courses plus coffee. There is no problem regarding availability of staff or equipment.

This is the menu presented in the order in which it was developed. Note alongside each dish why you think it was chosen, what implications its choice had for subsequent dishes, how it took into account other selected dishes, the season of the year and the expectations of the customers.

1. *Main course*
   Fillet of beef Wellington

2. *Second course*
   Turtle soup

3. *First course*
   Melon with York ham

4. *Vegetables*
   Roast potatoes
   Fresh broccoli

5. *Sweet*
   Chilled almond soufflé

1. *Fillet of beef Wellington* was selected because beef appeals to men. It will be tender (the officers are retired) and the name has an obvious connection with the army. Its selection has implications for the rest of the meal: it includes pâté so pâté could not be served as a starter, and the beef is baked in a pastry case so pastry cannot be used again. Fillet of beef is expensive so the other dishes must be kept down in cost.
2. *Turtle soup* is easy to digest and contrasts in flavour with the main course.
3. *Melon with York ham* introduces a seasonal aspect into the menu, the ham adds texture and colour contrast.
4. *Roast potatoes* and *Fresh broccoli* are particularly British dishes, and the green of the broccoli provides colour.
5. *Chilled almond soufflé* provides a light and refreshing end to a fairly substantial meal. The texture and flavour contrasts with all the earlier dishes. Neither a fruit or pastry-based dish would be suitable in view of the earlier choices.

There are five weaknesses in the following menu. Note below what these are and change two of the dishes to make a better menu.

Cream of asparagus soup

Fillets of sole Veronique

Suprême of chicken Princesse
with minted potatoes and garden peas

Fresh fruit salad

The five weaknesses are:

- asparagus is in the soup and forms the garnish to the chicken
- fruit occurs twice: in the fruit salad and grapes garnish the fish course
- there is little variety of colour: pale cream and green dominate
- the first two courses are both soft in texture
- there is little contrast in flavouring: most of the dishes are rather bland.

If you decided to leave the main course as it was you have probably changed the fish course and the soup. As chicken is not expensive, grilled cutlet of salmon or deep fried scampi are possible alternatives for the preceding course. A consommé with a pancake or rice garnish would add colour and ingredient contrast to the meal.

If menus are written in French (still the tradition in some of the more expensive establishments) then great care should be taken to get the spelling and grammar correct. This may mean checking with reference books and repertoires. English menus should also be spelt correctly — many of the errors that appear in English menus are probably the result of inaccurate typing, but this is no excuse. It is considered bad practice to use a combination of French and English (unless the generally accepted name of the item is French, for example mange-tout).

There are four typical types of errors in this menu. Circle them and note alongside what the problem is.

Cream of Asparagus soup

Fillet of Sole Waleska

Roast Aylesbury Duckling

Pommes anna
Haricots vert

Pear helene

1. There is unnecessary use of capital letters: 'Asparagus', 'Sole' and 'Duckling' are not proper nouns or the first word of the dish so they should not begin with a capital letter.
2. Proper names should start with a capital letter: 'anna' and 'helene' should appear like 'Waleska' and 'Aylesbury', also proper names.
3. The accents have been omitted on 'helene', most typewriters and printers can add accents where necessary and the word should be 'Hélène'.
4. There is a mixture of English and French: 'Pommes anna' should appear as 'Potatoes Anna style', and 'Haricots vert' (incorrect even in the French, for 'vert' should be plural like 'Haricots') should appear as French beans.

The section you read earlier from *Food Service Operations* outlined some ideas about menu design. You have almost certainly seen examples of menus you admire and others you think are poorly laid out.

Compare the menus reproduced in figures 11.2 and 11.3 of Food Service Operations *(pages 175 and 176) and a third example of your own. Note below to what extent you think they are:*

	Chelsea Room	***Rockgarden***	***Your example***
Informative			
Accurate			
Understandable			
Well-designed			

This completes this section. Take a break before starting on Section 2 which is concerned with the different catering systems available to produce meals.

SECTION 2
Food production systems

After completing this section you will be able to:

- identify the characteristics of a food production system
- compare some of the alternative production methods.

The organisation of catering kitchens varies considerably. Some hotel kitchens are still run on the traditional lines with a *partie* system, different chefs in different areas of the kitchen preparing a particular range of dishes. But more and more establishments use systems that have something in common with the production line in a factory, while fast food units often work on a flexible basis with staff rotating between jobs during their shift, serving at the counter for a time, deep frying the chips for a period and preparing the hamburgers for a third session.

In figure 1.1 on page 5 of *Food Service Operations* Peter Jones illustrates four systems and there are many variations on these. Three factors provide the key to the type of system that is appropriate.

The nature of the raw materials purchased. The options include:

- fresh produce unprepared in any way
- fresh produce prepared in some way, for instance chipped potatoes
- frozen produce (raw or partly cooked)
- canned or tinned goods
- dried/dehydrated foods
- chilled, fully prepared dishes that only require reheating
- frozen, fully prepared dishes that only require reheating
- vacuum cooked/sous-vide dishes that only require reheating
- producing a dish based on fully or partly-prepared ingredients, for example apple pie using frozen short pastry or a pastry mix, and fresh apples, frozen sliced apples or tinned sliced apples.

The method of holding the food once it has been prepared and/or cooked until it is served. The alternatives include:

- serving immediately it is prepared/cooked
- holding at serving temperature, for example in a bain-marie or hot cupboard
- chilling and holding at refrigerated temperatures, then reheating for service in a microwave oven, conventional oven, steamer or other appropriate equipment
- introducing a cook chill system (the food is kept under strictly controlled conditions for up to five days including the day of preparation and the day of service)
- introducing a cook freeze system (the food is prepared and cooked, rapidly frozen and kept for days, weeks or even months for some dishes, then reheated for service)
- introducing a vacuum cooking/sous-vide system (the food is vacuum packed in special bags, reheated in the bag or cooked from raw in the bag at the time of service).

The location and nature of the food preparation area in relation to where the food is served. The possibilities include:

- in the same building
- on the same site but in different buildings
- in a different part of the town, city or country: airline food may be served many thousands of miles away from where it was prepared.

The traditionally organised kitchen will probably use a combination of unprepared and prepared foods. In expensive establishments the only tinned goods may be truffles and real turtle soup, for example. Modestly-priced establishments may use frozen short and puff pastry and packet or tinned soups.

> Some hotels and restaurants use vacuum cooking or sous-vide methods to prepare dishes for à la carte menus and for functions. Read section 8 of *Foodcraft 1: The Dry Processes* (pages 200 to 205 in particular).

Call order systems make much greater use of convenience and semi-prepared foods. Favoured in popular catering units relying on low cost/high volume sales, call order kitchens are often open, in full view of the customers. The main items of equipment are grills, griddles, deep fryers and microwave ovens.

Fast food units also depend on pre-prepared foods. A limited range is offered and the preparation of dishes is carefully timed so that customers can be served immediately, and yet the food does not have time to spoil.

> Read sections 5.1 to 5.3 of *Food Service Operations* (pages 64 to 70) and study figure 5.2 (page 71) which illustrates the production of a hamburger.

In the school meals, industrial catering and hospital sectors of the industry, systems have been developed which can produce meals for a large number of people, sometimes spread over different locations.

> The cook freeze system was the first large-scale catering system of this type. Cook chill is now more common and like vacuum cooking is used by some hotel and restaurant companies and specialist function caterers.
>
> Read case study 6.3 in *Food Service Operations* (pages 93 and 94, and section 7.3 (pages 102 to 109). See also sections 8 and 9 of *Foodcraft 2: The Wet Processes* (pages 166 to 171 and 186 to 191 in particular).

Draw below a systems diagram of how the food is produced in your workplace. Indicate clearly the nature of the raw materials purchased, the method of holding the food once it has been prepared and the location and nature of the food preparation area.

After you have had a break start Section 3 which looks at the planning and design of catering kitchens.

SECTION 3
Kitchen planning and equipment

After completing this section you will be able to:

- identify the criteria that affect the planning of a food production area
- recognise the main items of kitchen equipment and their relevance to different food production systems.

It can be argued that the kitchen is the most important place in any catering enterprise and that successful catering depends largely on having a well designed food production area. What is certain is that poorly designed and equipped units will give the staff who have to work in them great problems in meeting the needs of their customers, maintaining hygienic standards and a safe workplace.

Planning a food production area involves asking simple questions such as:

- Who are the customers? Hospital patients, sales representatives, office workers? Is there a captive market, as in a hospital or prison, or will the business depend on chance custom?
- When will the customers want serving? Will the pattern of trade be all day, lunchtimes only, or predominantly in the evenings? Are there likely to be weekly and/or seasonal trends?
- What will be offered to the customers? What sort of menu? Will fresh or convenience products be used, or a combination?
- Who will prepare the food and serve the customers? What is the labour market like in the area? How much will have to be offered to attract and keep the right staff?
- Where will the food production area be located? Does it have to fit into an existing area? What constraints are there? What planning and local authority requirements have to be satisfied?

The answers to these and similar questions will help reach the best answer to the last question:

- How should the food production area be planned?

The objectives of a well-planned kitchen are:

- to provide appealing, safe and nutritious food to the customers
- to enable the staff to work safely and produce food to a consistent and appropriate standard, even in periods of peak demand
- to enable the staff to work efficiently and in an agreeable environment
- to function economically.

To help ensure these objectives are met the work flow in most kitchens can be broken down into stages.

Receiving and storing goods The delivery point should provide access for vehicles, with ramps or lifts to allow the movement of bulky or heavy items on trolleys. The doors and doorways should not interfere with the movement of goods from delivery point to storage. The storage areas should be adequate for the volume of stocks to be held and secure. They must be able to keep items at the appropriate temperature and humidity, and free from pests. Access to delivery and preparation areas should be straightforward.

Preparation and cooking areas Many large kitchens have separate areas for the preparation of meat, fish, vegetables, fruit and pastry products — these should have ready access to storage and cooking areas and provide suitable conditions for handling raw foods. The cooking area will usually bear most of the pressure in busy periods, but if the equipment is well sited and effective air conditioning provided (or some other means of keeping the temperature at a reasonable level) staff will be well able to cope.

Serving The serving area should be within easy access of the cooking area, whether the customers are served at table or serve themselves from a buffet or counter.

The secondary flows also have to be considered:

- used equipment and utensils to the pot wash and when clean into storage on pot racks, in drawers and cupboards so they are available when needed
- china, glassware and cutlery from service after use to the plate wash and when clean back to the serving area or storage in cupboards and on racks
- waste materials from the preparation and service areas to the waste disposal point
- staff changing, washing and toilet facilities and staff rest rooms for breaks and meals.

A huge range of equipment is now available for food preparation and cooking. The planning process must ensure that enough equipment of the right sort is available to provide the appropriate standards. Under-provision causes delay, inefficiency and is likely to cause the equipment to break down more frequently through over-use. Over-provision is a mis-use of investment funds, wastes space and adds unnecessarily to energy costs.

Energy costs are a major factor in selecting equipment. In some parts of the country there is no mains gas supply, but most caterers can choose between gas and electricity and if necessary solid fuel and liquid petroleum gas. Many pieces of equipment rely on electricity to operate even if there is another power source.

In general terms all equipment must meet the objectives of the particular establishment, so that its construction fits in with the basic kitchen design, is easy to use, needs the minimum maintenance, is easy to keep clean, will withstand heavy use and give long service.

Information on size, construction, capacity, fuel consumption and cost of different items of equipment can be obtained from the manufacturers. The trade magazines such as the *Caterer and Hotelkeeper*, *Hospitality* and the *British Hotelier and Restaurateur* regularly review new catering equipment. The HCIMA *Reference Book*, which is published annually, includes a list of members of the Catering Equipment Manufacturers Association of Great Britain and the Catering Equipment Distributors Association of Great Britain. Most of the major manufacturers show their range at trade exhibitions such as Hotelympia.

In the Mastercraft video *Foodcraft 1: The Professional Kitchen* equipment and kitchen design are covered and the Terms and Equipment units in the *Foodcraft* books (see page 2) give details of many different items.

Kitchen equipment: checklist and Foodcraft references

	For more details see: Foodcraft 1	Foodcraft 2
	pages	pages
Ovens		
baking	48, 49, 51	
proving	49	
combination	83, 85, 208	137, 139, 151, 154 175, 178, 197
forced-air convection	48, 51, 83, 85	175, 197
general-purpose	83	
infra-red		178
lo-roast	83	
microwave		154-6, 197
rack	83	
Cooking tops	81, 135	44
Induction cookers		45
Steamers		
atmospheric/low pressure		129, 136, 137
high pressure		130, 137
pressureless convection		129, 137
Fryers	161-2	
automatic	162	
enclosed	162	
pressure	162	
Grills	110-1	
charcoal/simulated charcoal	110, 114	
overhead/salamanders	110	
infra-red	111	
continuous	111	
rotary	111	
Bratt pans	137	45, 97, 113, 175
Steak-jacketed kettles/boiling pans		45
Stockpots		45
Mixers	192	
Mincers	192	
Food processors	192	
Slicing machines	192	
Rotary chopping bowls	192	
Ice cream machines	192	
Blast chillers/freezers		177, 196
Cryogenic chillers/freezers		176-7, 196
Thawing cabinets		197

Certain equipment is essential in any kitchen: worktops, sinks, refrigerators and means of cooking the food (which may simply be a grill and a microwave oven). Peelers, blenders, slicing machines are examples of equipment which can save labour and make the work of the kitchen staff easier. Generally the cost of buying such machinery will be weighed against the labour savings and improvements in the quality of the final product which may result.

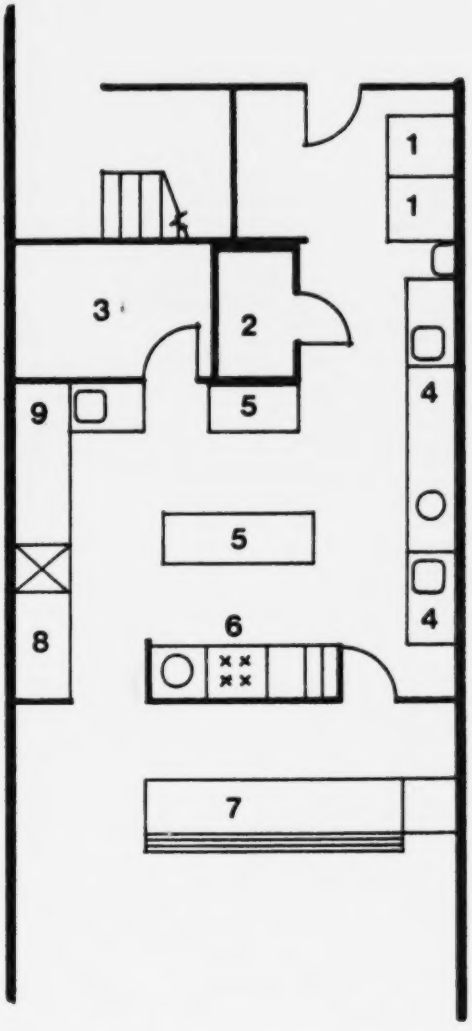
The process of planning the kitchen can move into the next stage once the production system has been decided and equipment needs considered. As a rule of thumb a restaurant with 100 seats offering table service and a table d'hôte menu will require 75 sq metres of space in the production area. When an à la carte menu is offered the space requirement increases to about 90 sq metres. The relationship between the different production areas and the number of seats for a table d'hôte menu and table service is as follows:

Seats (numbers)	50	100	200	300
Production area (sq metres)	50	75	95	130
consisting of:				
kitchen (50%)	25	40	50	65
stillroom (12.5%)	6	10	14	16
pot wash (6.5%)	3	5	6	8
plate wash (13.5%)	6	10	15	16
goods inwards/stores (17.5%)	10	10	10	25

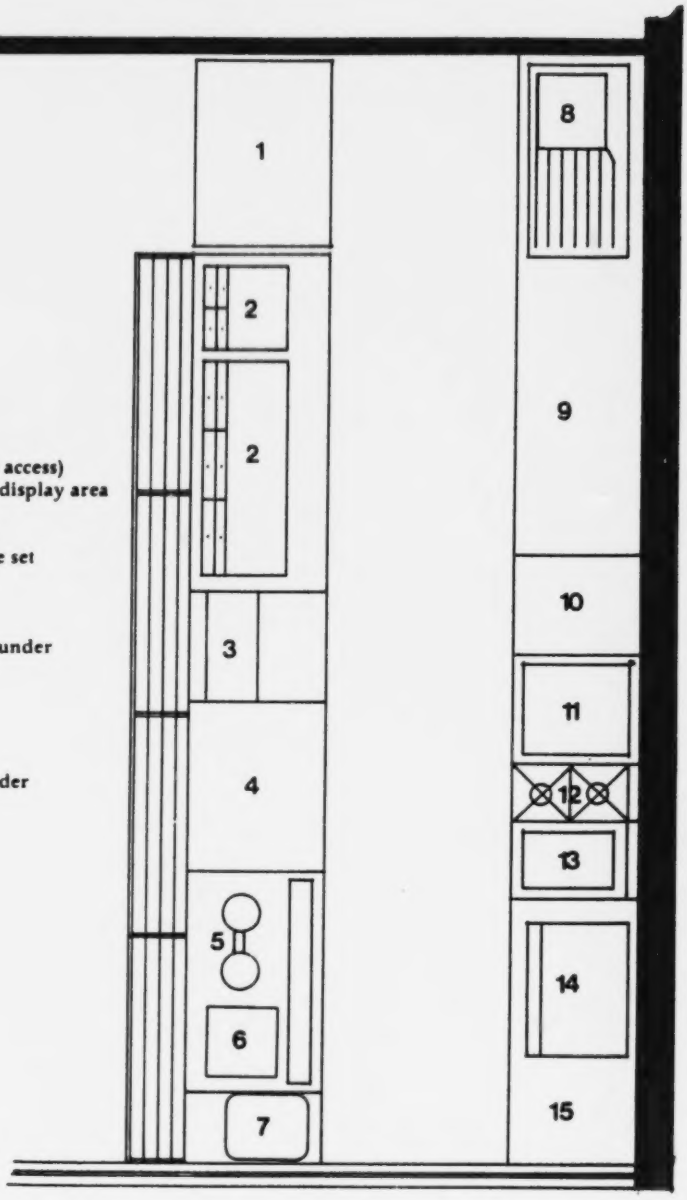
Look at the three kitchen plans that follow (reproduced from Kitchen Planning and Design — Case Studies *by Peter Douglas, Blandford Press, 1969). Note below each what production system you think the particular kitchen has been designed for, and any other points of interest. Use page 26 to draw a similar plan of your workplace kitchen.*

Kitchen A

Key
1 Upright freezer cabinets
2 Chill store
3 General store
4 Preparation benches
5 Work table
6 Cooking battery
7 Service counter
8 Crockery wash-up
9 Pot wash



Kitchen B

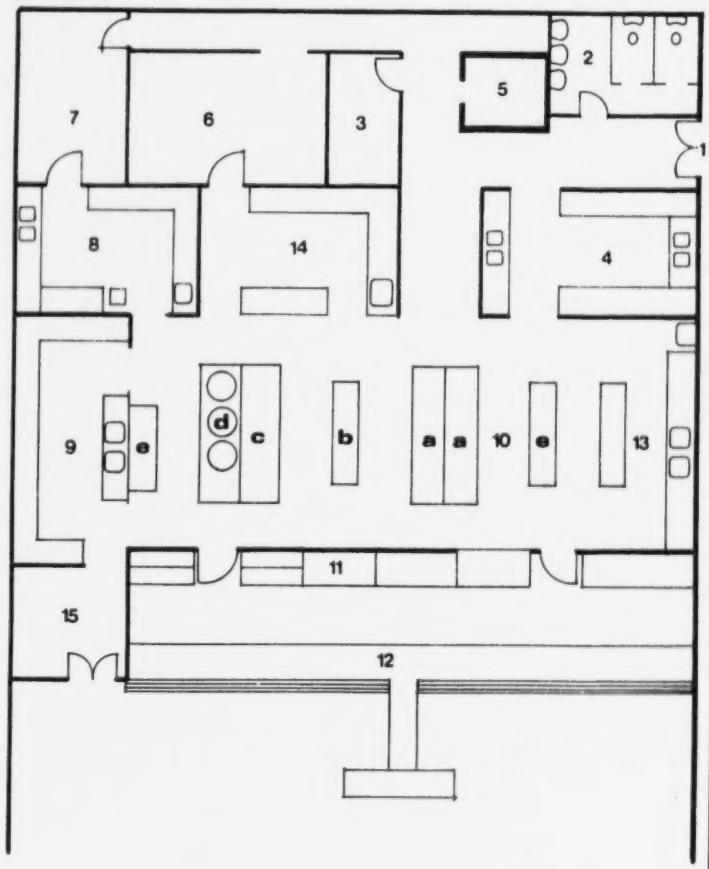


Key
1 Worktop (hinged flap for access)
2 Sandwich and cold foods display area
3 Hot foods display section
4 Unheated section
5 Beverage section with cafe set
6 Storage for cups
7 Cash register
8 Stainless steel sink
9 Work table, with storage under
10 Microwave oven
11 Griddle plate
12 Open boiling top
13 Deep fat fryer
14 Refrigerator
15 Work top with storage under

28

Kitchen C

Key
1 Service entrance
2 Staff cloakrooms
3 Office
4 Vegetable storage/preparation
5 Walk-in freezer cabinet
6 General store
7 Garbage/container disposal
8 Pot and trolley wash
9 Crockery wash
10 Cooking area
10 (a) Meat preparation
10 (b) Pastry ovens
10 (c) General purpose ovens
10 (d) Boilers/steamers
10 (e) General preparation
11 Pass through cupboards to servery
12 Self service section
13 Meat and fish preparation
14 Pastry and sweets preparation
15 Lobby



Your workplace kitchen

Kitchen A uses primarily prepared foods. Note the amount of space given over to freezers and the chill store, also the limited preparation space and cooking equipment.

Kitchen B is a call order kitchen with self-service from a counter (items 1 to 7 on the plan). A limited range of hot dishes is offered and cooked on the equipment along the back wall.

Kitchen C is typical of a fairly large hotel kitchen. The sections (10a to 10e) relate to the organisation of the kitchen team.

Have a break before you look at cost control in Section 4.

SECTION 4
Production control

After completing this section you will be able to:

- explain the purpose of standard recipes
- calculate the portion cost of a dish
- explain the role of yield tests
- work out gross profit and understand its relationship with menu prices and why variations can occur.

If every time a certain dish is prepared, similar ingredients are used, the same recipe is followed and the same portion size served, meaningful comparisons of production costs can be made between one period and another. For most catering businesses deciding on the recipe, portion size and selling price is the most important policy decision that will be made. It determines what the product actually is, what it will cost to produce, what labour will be required to produce it and what equipment will be needed. The product will be designed to appeal to the target market and to compete effectively with other businesses in the area.

Fast food is one of the easiest catering businesses to control: the menu is limited and the products are standardised. The staff training places considerable emphasis on the need for standardisation. Manuals and wall charts remind staff of the ingredients, cooking method and times, and the style of presentation. The ingredients themselves are standardised on a national or even an international basis.

Standard recipes specify the exact ingredients for a particular dish and how the dish should be prepared. So in a fast food restaurant the standard recipe may specify the following ingredients for a beefburger:

1	Sesame bun
1 x 4 oz	Beef patty
½ oz	Onion rings
2 slices	Dill pickle
1 x ½ oz measure	Mayonnaise

A purchase specification for each of these items will lay down more detailed requirements, for example the weight, size and content of the sesame bun.

The cost of producing the beefburger can be worked out by adding the costs of the individual ingredients; for instance:

		£ p
1	Sesame bun	0.12
1 x 4 oz	Beef patty	0.65
½ oz	Onion rings	0.08
2 slices	Dill pickle	0.04
1 x ½ oz measure	Mayonnaise	0.06
		0.95

Standard recipes can be used in all areas of food and beverage production, for cocktails for example, for bulk production in cook chill or cook freeze systems. When the recipe is for a certain number of portions the overall cost has to be divided by the number of portions to produce the individual *portion cost*. The portion size must also be specified. With chips in a fast food unit portion size is often determined by the size of scoop used or the size of the package the chips are sold in. Soups can be portioned using a ladle of a certain capacity, peas using a wire scoop of a certain size.

Working out the portion cost for a dish may require some preliminary calculations. In the beefburger example above the onion rings may be purchased already prepared in bags of, say, 10 lbs. The cost of an ½ oz portion would have to be worked out from this:

10 lb bag costs	£25.60
Portions obtained from 10 lb bag	$\frac{10 \times 16}{\frac{1}{2}} = 320$
Cost of 1 portion	$\frac{£25.60}{320} = £0.08$

The cost of the slices of pickle may have to be worked out by counting the average number of pickles in a jar, estimating how many slices they would produce and then dividing the cost of the jar by the total number of slices:

Jar of dill pickle costs	£6.00
Jar will give	300 slices
Slice of pickle costs	$\frac{£6.00}{300} = £0.02$

Study this standard recipe for lamb kebabs. Note below what extra information you would need to know to work out the portion cost.

Lamb kebabs: standard recipe

SERVES 10

1½ kg	*diced leg of lamb*
2	*lemons (for juice)*
1 dl	*sunflower oil*
pinch	*dried powdered thyme*
500 g	*savoury rice*
5 dl	*jus lié*

Method

1. *Marinade lamb with lemon juice and thyme for 3 hours.*
2. *Divide lamb into 10 portions and arrange each portion on a skewer.*
3. *Grill kebabs.*
4. *Arrange on bed of savoury rice, leaving skewers in place.*
5. *Serve sauce separately.*

You would need to have the standard recipe for the savoury rice.

You may also have noted that you need more information on how the lamb is purchased. For example if whole legs of lamb were used how much diced meat would be obtained from each leg? Could the bones and scraps of meat be used for another purpose, for example stock?

Many commodities are purchased at a certain price per kilo/pound/tin and are then prepared for use in the course of which some of the original weight/volume is wasted. The diced leg of lamb is an example. If whole legs are bought at £2.90 per kilo, the diced meat will cost more per kilo because some of the original weight will be lost in gristle, fat, trimmings and bones.

The process of working out what the leg of lamb produces in terms of diced meat, or a tin of pineapple in terms of rings is called a *yield test*. As there will be variations between the yield of one leg of lamb and another and the number of rings in a tin of pineapple may vary, yield tests are usually carried out on a number of examples and the average yield found.

Three legs of lamb were selected at random from the day's delivery and weighed before and after preparation.

YIELD TEST: DICED LEG OF LAMB DATE: 14 MARCH 1990
CARRIED OUT BY: PETER SMITH COMMENTS: 3 legs selected at Random

DETAILS	WEIGHT kg	WEIGHT %	COST per kg	TOTAL COST
original weight	6·90	100	£2·90	£20·01
Bones, gristle, fat etc	1·10	16		
Diced meat	5·80	84	£3·45	£20·01

In the leg of lamb example it has been assumed that the bones, gristle, fat etc were discarded. However many caterers put the trimmings to good use, for example bones to make stocks.

A wholesale cut of beef weighing 17 kg is purchased at £2.28 per kg. After boning and trimming, 10 kg of steak meat, 3 kg of stewing meat and 4 kg of bones were left. Bones are to be valued at £0.10 per kg, and stewing meat at £2.80 per kg. Work out below what cost per kilo should be given to the steak meat?

Cost of wholesale cut	17 x 2.28 = £38.76
Value of bones	4 x 0.10 = £0.40
Value of stewing meat	3 x 2.80 = £8.40
Value of steak meat	38.76 - (8.40 + 0.40) = £29.96
Cost per kg of steak meat	$\frac{£29.96}{10}$
	= £3.00 per kg

A similar technique can be used for working out the yield of melon balls from melons, or sliced salmon from a whole side. It is simply a method of cost allocation.

Yield tests are a useful way of comparing the benefits of purchasing pre-portioned meats or prepared vegetables with wholesale cuts/unprepared vegetables. The costs of preparing the items would also be taken into account.

Yield tests can also be used to allocate the costs of cooked meat. For example, if a restaurant serves a standard roast beef portion of 6 oz, a yield test can be used to determine the portion cost.

YIELD TEST: Roast rib of beef
CARRIED OUT BY: Geoff Taylor

DATE: 21 March 1990
COMMENTS: Based on 6oz portion

DETAILS	WEIGHT lb	WEIGHT %	COST per lb	TOTAL COST
Ready for roasting	110	100	£1·81	£199·10
After roasting	91	83		
Bones, trimming etc.	32	29		
After carving	59	54	£3·37	

Cost of 6oz portion = £3·37-16×6 = £1·26

If this test was based on a number of ribs of beef and the yield could therefore be regarded as typical, it becomes possible to work out the relationship between the cost of the prepared beef and the cost of each portion. This is called the *portion cost multiplier* and is found by dividing the portion cost by the original purchase price.

$$\text{Portion cost multiplier} = \frac{\text{Portion cost}}{\text{Purchase price}} \qquad \frac{1.26}{1.81} = 0.7$$

If the purchase price of the beef increases to £1.90 per pound then the cost per 6 oz portion will be:

£1.90 x 0.7 = £1.33

Consider the role of standard recipes and yield tests in your workplace. Note below what use is made of them at present and what use you feel could be made of them in the future.

Standard recipes

Yield tests

GROSS PROFIT

Standard recipes provide a useful way of establishing the production cost of a certain size portion of a particular dish. Over any given period the total production costs should be in line with the number of portions served.

Many caterers use the *gross profit* achieved over a trading period as a measure of how successfully production costs have been controlled.

Gross profit is the difference between how much the goods cost to buy and how much they are sold for. A profit-making establishment will add a certain gross profit margin to the production costs of a dish in order to arrive at the menu or selling price. This gross profit will have to cover all the other costs of running the business: wages, national insurance, rent, rates, telephone, electricity and gas charges and so forth and (hopefully) give the owner a profit (the *net profit*) at the end of the day.

If a bottle of tonic water costs 15p and sells for 55p then the gross profit is 40p. This is usually expressed as a percentage.

$$\frac{\text{gross profit}}{\text{selling price}} \times 100 = \text{GP\%} \qquad \frac{40}{55} = 72.7\%$$

A sirloin steak costs £2.24 per portion and sells for £5.60. Work out below:

Gross profit in money terms

Gross profit %

The gross profit is: £5.60 - £2.24 = £3.36
The gross profit percentage is: $\frac{3.36}{5.60} \times 100 = 60\%$

The procedure for working out the gross profit over a period of days or weeks is similar to that used for a particular drink or dish. Usually the cost of materials will have to be worked out taking into account the opening and closing stock and the value of the purchases in the period.

Complete the following calculation then work out the gross profit for the period.

	£	£
Food sales		*6700*
Opening stock	*1200*	
Purchases	*3000*	
Closing stock	*1600*	
Cost of materials used		
Food gross profit		
Gross profit percentage		%

	£	£	
Food sales		6700	
Opening stock	1200		
Purchases	3000		
	4200		
Closing stock	1600		
Cost of materials used	2600	2600	
Food gross profit		4100	
Gross profit percentage		61%	$\frac{4100}{6700} \times 100 = 61\%$

The gross profit achieved on the overall operation is often used as a budgetary control device. The performance of the kitchen or bar for example over the previous week or month will be measured by the gross profit margin achieved in the period.

The difference between the target gross profit and the actual gross profit, or *variance* will be investigated and an explanation sought.

Note below what the causes might be for a lower-than-target gross profit. Use the experience you have gained in your own workplace, but also consider what might happen in other types of catering establishment.

Your reasons might include:

- the original target was unrealistic
- poor portion control (this can take place in the kitchen and in the service area, if for example there is a sweet trolley)
- poor storage, so items spoil or pass their sell-by date and have to be thrown away
- poor preparation, with high wastage
- standard recipes and cooking methods not followed
- purchase price of goods increased but menu prices not changed
- stock stolen, food for customers consumed by staff, delivery shortages not discovered.

Read the paragraphs on portion control in* Food Service Operations *(page 236) and case study 1.5 (page 235). Note below what the reasons might be for the variance.

Your reasons might include:

- breakages not recorded
- waste beer, end of barrel losses not accounted for
- faulty bottles of wine not recorded
- incorrect measures served
- cash sales not rung up on till
- bar staff have consumed drinks themselves.

Take a break before starting the final section which looks at how dishes are priced.

SECTION 5
Pricing

After completing this section you will be able to:

- calculate selling price using a variety of methods
- state the advantages and disadvantages of each method.

What price a business charges for its products clearly depends on how much profit, if any, it wishes to make. The greater the margin between selling price and cost the higher the profit. But higher prices might mean fewer sales — either because there are less people who can afford to pay the higher prices or because at those prices competitors offer better value. There are other factors to consider such as the volume of sales (more sales at a lower profit might produce a better overall result), the added value that can be given to the product (high prices can be taken as a sign of better quality especially if there is an element of fashion), the activities of competitors (for example a new competitor entering the market with lower prices) and any general change in the pattern of consumer spending (for example because of an increase in mortgage rates).

Read section 15.5 of Food Service Operations *(pages 240 to 245). Note below the different methods of pricing described by Peter Jones.*

Peter Jones describes two basic approaches to pricing:

- *informal methods*, which attempt to take into account what the customers might be willing to pay and what the product costs to produce. Intuition may play a role, the prices charged by competitors is likely to be considered and psychological factors may also be taken into account.
- *cost plus methods*, which add a certain amount to what it has cost to produce the item. This may be a percentage, a fixed sum for instance £1, or a ratio. A variation on this method looks at what the customer is likely to spend and what percentage gross profit is required for the business to achieve its objectives. The dishes offered must be within the customer's maximum spend and sufficiently profitable. The *rate of return method* is another, rather more complicated variation, taking into account what return the business is seeking on the capital which has been invested in it.

In the previous section you looked at gross profit percentages. Try and work out below what the selling price would be for a dish that costs 70p to produce and must make a gross profit of 65%.

You may have proceeded on the following lines:

If the gross profit is 65% then the food cost must be 35% and the selling price 100%

It is known that 35% = £0.70

So 1% = $\frac{0.70}{35}$ = £0.02

and 100% = 100 x 0.02 = £2.00, so the selling price is £2.00.

Expressed as a formula this is:

$$\frac{\text{Food cost}}{100 - \text{gross profit \%}} \times 100 = \text{Selling price}$$

or $\frac{0.70}{100 - 65} \times 100 = \frac{0.70}{35} \times 100 = £2.00$

Adding a fixed gross profit percentage to all dishes may mean that customers are asked to pay rather more than they think reasonable on certain dishes. For example when customers know the price of a rump steak in a butcher's shop or supermarket, they might think it unreasonable to have to pay substantially more than this when all the restaurant has done is to grill and serve it. On the other hand if the selling price of a fresh fruit salad is based on the same gross profit margin (this time on a quite low cost price), it will represent excellent value — especially if the customer is aware of how much work has gone into making it.

A popular method of overcoming this problem is to vary the gross profit margin according to the popularity of the dish, what it costs to produce, how much preparation work it involves and its position on the menu. The aim is to achieve an overall gross profit percentage when the popularity of the different dishes is taken into account.

This method of varying the gross profit percentage on different dishes may mean that a caterer aims at a 80% gross profit margin on starters, 60% on main courses and 75% on sweets, so that the average gross profit on a three course meal is around 65%. But the sales mix and its influence on gross profit can be more difficult to predict. Work out below what the average gross profit would be when a customer orders the following two dishes:

Minute steak, food cost £1.10, gross profit required 60%

Ice cream, food cost £0.30, gross profit required 80%

You may have said that the average gross profit is 70% ($\frac{80\% + 60\%}{2}$ = 70%) but it is not as straightforward as this because the steak costs over three times as much as the ice cream.

You should have combined the two items, working out the total selling price, the total cost price and then the gross profit on both.

$$\text{Selling price of steak} = \frac{1.10}{(100 - 60)} \times 100 = £2.75$$

$$\text{Selling price of ice cream} = \frac{0.30}{(100 - 80)} \times 100 = £1.50$$

$$\text{Gross profit} = \frac{(2.75 + 1.50) - (1.10 + 0.30)}{(2.75 + 1.50)} \times 100 = \frac{4.25 - 1.40}{4.25} \times 100 = 67\%$$

To avoid having to use different gross profit margins for different types of dish some caterers prefer to add a fixed sum to the cost of all dishes. The amount added must be sufficient to cover all the non-food costs involved in running the operation and contribute to profits. So the calculation will mean working out the average number of dishes sold in a particular period when the business covered all its costs and made a satisfactory profit.

Use the steak and ice cream example to see what effect adding a fixed contribution to overheads and profits has on the selling price. The sum to be added is £1.40. Work out the selling price of both items below. Also work out what the combined gross profit would be (so that you can compare this method with the variable gross profit method).

Selling prices:

Steak

Ice cream

Gross profit on both:

Selling prices: Steak £2.50 (£1.10 + £1.40) Ice cream £1.70 (£0.30 + £1.40)

The effect is that high cost items are kept down in price while low cost items become more highly priced. This has an advantage when the customer regards the main course price as an indicator of the overall cost of the meal.

The gross profit on both is very similar to the variable gross profit example, 66.6%, but this would not be the case if more extreme examples had been used.

$$\text{Gross profit} = \frac{(2.50 + 1.70) - (1.10 + 0.30)}{(2.50 + 1.70)} \times 100 = \frac{4.20 - 1.40}{4.20} \times 100 = 66.6\%$$

The ratio method avoids the need to count the number of dishes sold. It looks at the relationship between food costs on the one hand and total costs and profit on the other hand.

Remind yourself of how the calculation is done by reading page 243 in Food Service Operations. *Then use the ratio method to work out the selling price for the steak and ice cream. Also work out the combined gross profit.*

The restaurant has total costs of £65,000 and makes a profit of £7000. The total food cost in the same period is £24,000.

Ratio of total costs and profit to food costs:

Selling prices:

Steak

Ice cream

Gross profit on both:

Ratio of total costs and profit to food costs: (65,000 + 7000):24,000 72,000:24,000 that is 3:1

To work out the ratio, both sides are divided by the lower value, 24,000 in this example: $\frac{72{,}000:24{,}000}{24{,}000\ \ 24{,}000} = 3:1$

Selling prices: Steak £3.30 (£1.10 x 3) Ice cream £0.90 (£0.30 x 3)

As the combined selling price is £4.20, the same as in the previous example you probably realised there was no need to work out the gross profit again.

In situations where the maximum amount the customers are prepared to spend is known and a certain gross profit has to be achieved, dishes can be planned by working backwards from the maximum selling price.

For a restaurant which can only charge £3.20 for a two course meal and must achieve a gross profit of 64% work out below the amount that can be spent on food.

Could minute steak and ice cream be put on the menu (assuming the same food cost as in the previous examples)?

If 64% is the gross profit only 36% (100 - 64) can be spent on food:

$$\frac{36}{100} \times 3.20 = £1.15$$

The steak and ice cream cost £1.40 so the answer is no.

Pricing is a complex subject, but once you have got a feel for what your customers are prepared to pay and what gross profit margin you need to cover all your costs and make a profit, then the emphasis can be put on keeping costs within these profit margins. This means carefully working out and controlling the cost of individual dishes/menu/price list items.

This completes this self-study unit. If you have attended the HCT course *Food and Beverage Production* you should complete the assignments in your Operational Management planner.

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